

# A taxonomic study of the genus *Micromelalopha* Nagano in China (Lepidoptera: Notodontidae)

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**Abstract:** This paper deals with the 10 species of the genus *Micromelalopha* Nagano, 1916 that are found in China, including two new species: *M. variata* Wu et Fang sp. nov. and *M. ralla* Wu et Fang sp. nov. *M. flavomaculata* Tshistjakov is treated as a subspecies of *M. vicina* Kiriakoff. *M. haemorrhoidalis cinereibasis* Kiriakoff is synonymized with *M. haemorrhoidalis haemorrhoidalis* Kiriakoff. The male and female genitalia of the new species are illustrated. A key to the Chinese species is provided.

**Key words:** Lepidoptera; Notodontidae; *Micromelalopha*; new species; China

The genus *Micromelalopha* Nagano, 1916 is comprised of about 25 species, all of which are found in Asia. Its distributional range includes China, Japan, Korea, Russia (Primorye), Afghanistan, India, Nepal, Vietnam, Philippines, Malaysia and Indonesia.

Cai (1979) described the 2 known Chinese species. Schintlmeister (1989, 1992) reported 9 Chinese species, including 3 new species. In this paper, 10 Chinese species are recognized, including two new species.

The type specimens are deposited in the Institute of Zoology, Chinese Academy of Sciences, Beijing, China.

## *Micromelalopha* Nagano, 1916

*Micromelalopha* Nagano, 1916, *Bull. Nawa Ent. Lab.* 1:

10. Type-species: *Pygaera troglodyta* Graeser, 1890, by monotypy.

*Bifurcifer* Ebert, 1968, *Reichenbachia* 10: 203. Type-species:

*Bifurcifer afghanus* Ebert, 1968, by original designation.

*Closteroides* Kiriakoff, 1977, *Mitt. Munch. Ent. Ges.* 66:

33. Type-species: *Closteroides dorsalis* Kiriakoff, 1977, by original designation.

*Closterellus* Fletcher, 1980, *Generic name of moths of the world*, 2: 41. Replacement name for *Closteroides* Kiriakoff.

Antennae bipectinate in both sexes. Thorax with crest. Hind tibia with one pair of spurs. Forewing produced apically; veins without areole;  $M_2$  indistinct or disappear;  $M_1$  from upper angle of cell. Hindwing with vein

$M_2$  faint;  $M_1$  and Rs stalked short. Male genitalia: Uncus bifurcate apically; gnathos vestigial; valva membranous mostly, rounded apically; juxta bifurcate caudally.

## Key to Chinese species of *Micromelalopha*

1. Frons white ..... *M. albifrons*  
Frons brown to dark brown ..... 2
2. Aedeagus with a stout cornutus ..... 3  
Aedeagus without cornuti ..... 6
3. Valva with a process at end ..... 4  
Valva without process at end ..... 5
4. Juxta with long caudal processes; aedeagus as long as valva .....  
..... *M. haemorrhoidalis*  
Juxta with short caudal processes; aedeagus longer than valva  
..... *M. ralla*
5. Aedeagus with a short cornutus ..... *M. vicina vicina*  
Aedeagus with a long tapering cornutus .....  
..... *M. vicina flavomaculata*
6. End of juxta slightly sclerotized ..... 7  
End of juxta strongly sclerotized ..... 9
7. Valva with processes at middle and end; aedeagus thin .....  
..... *M. baibarana*  
Valva without processes at middle and end; aedeagus thick ...  
..... *M. sieversi*
8. Valva end protruding into 2 dents ..... 9  
Valva end protruding into 1 dent ..... 10
9. Juxta caudal portion bifurcate asymmetrically ..... *M. variata*  
Juxta caudal portion bifurcate symmetrically .....

基金项目 Foundation item: The project was supported by the National Natural Science Foundation of China (No. 30270181)

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收稿日期 Received: 2002-07-10; 接受日期 Accepted: 2003-01-08

- ..... *M. dorsimacula*
10. Juxta bifurcate caudal portion long, smooth ..... *M. sitecta*
- Juxta bifurcate caudal portion short, dentate ..... *M. adrian*

***Micromelalopha sieversi* (Staudinger, 1892)**

*Pygaera sieversi* Staudinger, 1892, in Romanoff, *Mem. Lepid.* 6: 370.

*Micromelalopha populivona* Yang & Lee 1978, *Moths of North China* 2: 498.

*Micromelalopha troglodyta*: Cai, 1979: 151. [misidentification]

*Micromelalopha sieversi*: Schintlmeister, 1992: 187.

Host plants: *Populus* spp., *Salix* spp.

Specimens examined: Beijing: 7 ♂♂, Wenquan, 1971. VIII. 12; 6 ♂♂, Mt. Baihuashan, 1973. VII. 8 – 18; 2 ♂♂ 1 ♀, Sanbao, 1972. VII. 24; 3 ♂♂ 1 ♀, Dongbeiwang Nursery of Young Plants, 1958. VIII. 17. Jilin: 6 ♂♂ 1 ♀, Mt. Changbaishan, 1982. VII. 2 – 11. Heilongjiang: 1 ♂, Mt. Dailing, 1958. VIII. 7. Zhejiang: 14 ♂♂, Hangzhou, 1972. VIII. 5; 29 ♂♂ 4 ♀♀, Mt. Tianmushan, 1936. V. 14, 1972. VII. 28 – 30, 1973. VII. 21. Anhui: 2 ♂♂, Chuxian Co., 1972. VIII. 1. Jiangxi: 1 ♂, Mt. Jiulianshan, 1975. VII. 30; 1 ♂, Mt. Lushan, 1935. VII. Shangdong: 16 ♂♂, Qihe Co., 1969. VIII. Hubei: 8 ♂♂ 2 ♀♀, Shennongjia Co., 1980. VII. 18; 2 ♂♂, Xingshan Co. (1 350 m), 1993. VI. 14; 1 ♂ 1 ♀, Zigui Co. (100 m), 1993. VI. 13; 3 ♂♂, Badong Co (175 m), 1993. VI. 26. Hunan: 1 ♂, Mt. Hengshan, 1979. VIII; 2 ♂♂, Hanshou Co., 1987. IV. 3 – 5. Sichuan: 7 ♂♂, Mount Emei (550 – 1 000 m), 1957. IV. 27, IX. 16, 1979. VI. 21; 1 ♂ 2 ♀♀, Mt. Qingchengshan (700 – 1 600 m), Dujiangyan City, 1979. VI. 4 – 9; 1 ♂, Huili Co., 1974. VII. 23; 1 ♂, Xichang City, 1974. V. 18; 3 ♂♂, Fengdu Co. (610 m), 1994. VI. 3; 2 ♂♂, Wanxian Co. (1 200 m), 1993. VII. 10; 7 ♂♂, Panzhihua City, 1981. VI. 14 – VIII. 22. Yunnan: 1 ♂, Kunming City, 1980. V. 16; 1 ♂, Weixi Co. (2 320 m), 1979. VI. 27. Xizang: 1 ♂, Linzhi Co. (3 000 m), 1977. VIII. Shaanxi: 11 ♂♂ 4 ♀♀, Mt. Taibaishan, 1980. VII. 14 – 19; 14 ♂♂, Ningshan Co., 1979. VII. 25 – VIII. 6. Gansu: 1 ♀, Zhengning Co., 1979. VII. 7; 3 ♂♂ 1 ♀, Qinghe Forest Farm (1 400 m), Kangxian Co., 1999. VII. 8.

Distribution: Beijing, Shanxi, Jilin, Heilongjiang, Jiangsu, Zhejiang, Anhui, Jiangxi, Shandong, Hubei, Hunan, Sichuan, Yunnan, Xizang, Shaanxi, Gansu; Japan,

Korea, Russia.

***Micromelalopha haemorrhoidalis* Kiriakoff, 1963**

*Micromelalopha haemorrhoidalis* Kiriakoff, 1963, *Bonn. Zool. Beitr.* 14: 250; Cai, 1979: 152; Schintlmeister, 1992: 186. (ssp. *cinereibasis* Kiriakoff and ssp. *haemorrhoidalis*)

*Micromelalopha cinereibasis* Kiriakoff, 1963, *Bonn. Zool. Beitr.* 14: 250.

*Micromelalopha troglodytes* Kiriakoff, 1963, *Bonn. Zool. Beitr.* 14: 253.

Specimens examined: Beijing: ♂, Mt. Baihuashan, 1972. VIII. 1. Inner Mongolia: 1 ♂, Bao'an, 1965. VI. 26. Hubei: 6 ♂♂, Shennongjia Co. (860 – 1 800 m), 1981. VII. 19 – VIII. 5. Sichuan: 1 ♀, Mount Emei, 1957. IV. 22. Yunnan: 2 ♂♂, Yiliang Co. (1 900 m), 1980. VI. 15; 2 ♂♂, Xiaocaiba Forest Farm (1 900 m), 1982. VI. 27; 1 ♂, Zhenxiang Co. (1 600 m), 1980. VI. 12. Xizang: 2 ♂♂ 2 ♀♀, Jiangda Co., 1976. VII. 25 – 26. Shaanxi: 1 ♂, Mt. Taibaishan, 1980. VII. 14 – 19; 18 ♂♂, Ningshan Co., 1979. VII. 7 – VIII. 6; 7 ♂♂, Huoditang (1 580 m), 1998. VIII. 15. Gansu: 3 ♂♂, Wenxian Co. (2 350 m), 1998. VI. 28; 3 ♂♂ 1 ♀, Kangxian Co. (1 400 m), 1999. VII. 8.

Distribution: Beijing, Inner Mongolia, Hubei, Sichuan, Yunnan, Xizang, Shaanxi, Gansu.

Remarks: Schintlmeister (1992) divided this species into 2 subspecies: ssp. *haemorrhoidalis* Kiriakoff (Northwestern China) and ssp. *cinereibasis* Kiriakoff (Southwestern China). He pointed out that the forewing with its darker discocellular spot is paler in the former than in the latter. However, it is very difficult to distinguish them. Therefore, we no longer recognize the subspecies.

***Micromelalopha vicina vicina* Kiriakoff, 1963**

*Micromelalopha vicina* Kiriakoff, 1963, *Bonn. Zool. Beitr.* 14: 250; Schintlmeister, 1992: 185.

Specimens examined: Zhejiang: 3 ♂♂, Mt. Tianmushan, 1972. VII. 28, 1973. VII. 20 – 24. Fujian: 2 ♂♂, Mt. Longqishan (650 m), Jiangle Co., 1991. VIII. 16 – 23. Jiangxi: 2 ♂♂ 1 ♀, Mt. Jiulianshan, 1975. VI. 14 – VII. 25; 1 ♂, Dayu Co., 1975. VII. 17; 1 ♂, Doushui Co., 1975. VII. 3. Guizhou: 2 ♂♂, Mt. Fanjingshan, 2002. VI. 1.

Distribution: Zhejiang, Fujian, Jiangxi, Guizhou; Vietnam.

***Micromelalopha vicina flavomaculata* (Tshistjakov, 1977)****stat. nov.**

*Micromelalopha flavomaculata* Tshistjakov, 1977, *Ent. Obozr.* 56: 839.

Specimens examined: Heilongjiang: 3 ♂♂, Yabuloni, 1940. VII. 29.

Distribution: Heilongjiang; Japan, Korea, Russia.

Remarks: *Micromelalopha flavomaculata* Tshistjakov, 1977 is very similar to *M. vicina* Kiriakoff in both genitalia and external characters, only differing from the latter in the shape of the aedeagus. Therefore, it is reasonable to treat it as a subspecies of *M. vicina* Kiriakoff.

***Micromelalopha baiarana* Matsumura, 1929**

*Micromelalopha baiarana* Matsumura, 1929, *Ins. Matsum.* 4: 46.

Specimens examined: 8 ♂♂ 2 ♀♀, Hainan: Mt. Jianfengling, 1980. I. 20, 1981. X. 23.

Distribution: Hainan, Taiwan; Vietnam, Malaysia, Indonesia.

***Micromelalopha adrian* Schintlmeister, 1989**

*Micromelalopha adrian* Schintlmeister, 1989, *Neue Ent. Nachr.* 25: 116.

Specimens examined: Fujian: 4 ♂♂, Mt. Wuyishan, 1979. VIII. 17, 1982. IV. 24. Jiangxi: 1 ♂, Jinggangshan Co., 1979. IV. 22. Hubei: 2 ♂♂, Mt. Xingdoushan, Lichuan Co., 1989. VII. 23. Hunan: 1 ♂, Mt. Tianpingshan, Sangzhi Co., 1981. VIII. 31.

Distribution: Zhejiang, Fujian, Jiangxi, Hubei, Hunan, Guangdong.

***Micromelalopha dorsimacula* Kiriakoff, 1963**

*Micromelalopha dorsimacula* Kiriakoff, 1963, *Bonn. Zool. Beitr.* 14: 253.

Specimens examined: 3 ♂♂ 2 ♀♀, Shaanxi: Ningshan Co., 1979. VII. 7 – VIII. 18; 2 ♂♂, Huoditang (1 580 m), 1998. VII. 26 – VIII. 15. Gansu: 2 ♂♂, Qiujiaaba (2 350 m), Wenxian Co., 1998. VI. 28, 1999. VII. 21; 1 ♂, Qinghe Forest Farm (1 400 – 1 600 m), Kangxian Co., 1998. VII. 15; 1 ♂, Yangba (1 000 m), 1999. VII. 10; 2 ♂♂, Shatang Forest Farm (2 400 m), Zhouqu Co., 1999. VII. 14.

Distribution: Yunnan, Shaanxi, Gansu.

***Micromelalopha sitecta* Schintlmeister, 1989**

*Micromelalopha sitecta* Schintlmeister, 1989, *Neue Ent. Nachr.* 25: 116.

Specimens examined: Yunnan: 2 ♂♂, Tianchi (2 550 m), Yunlong Co., 1982. VIII. 21; 2 ♂♂, Mt. Zhimangshan (2 430 m), 1981. VI. 20; 1 ♂, Zhonghefeng (2 600 m), Dali City, 1980. VIII. 31; 1 ♂, Shatanshao (2 300 m), Weishan Co., 1980. VIII. 12; 1 ♂, Yuhu (2 700 m), Lijiang, 1984. VII. 27. Xizang: 2 ♂♂ 1 ♀, Yigong (2 300 m), Bomi Co., 1983. VIII. 25; 1 ♂ 1 ♀, Jilong Co., 1984. VI. 20 – VII. 15; 2 ♂♂, Xiasima, Yadong Co., 1983. VI. 25.

Distribution: Yunnan, Xizang; Nepal.

***Micromelalopha albifrons* Schintlmeister, 1989**

*Micromelalopha albifrons* Schintlmeister, 1989, *Neue Ent. Nachr.* 25: 117.

Specimens examined: Type specimens were collected in Lianping Co., Guangdong Province, and were kept in Bonn, German.

Distribution: Guangdong, Hong Kong; Vietnam.

***Micromelalopha variata* Wu et Fang, sp. nov. (Fig. 1)**

Wing expanse 32 – 36 mm. Head, thorax and abdomen reddish brown to dark reddish brown. Forewing reddish brown, 3 gray fasciae edged with dark interiorly and exteriorly: subbasal fascia wavy; inner fascia arched, with an angulate spur extending outwards at vein  $Cu_2$ ; outer fascia wavy; subterminal fascia represented by a row of indistinct dark striae between veins; a small, rounded, black discocellular spot. Hindwing pale reddish brown, outer half darker; with a dark brown small spot on tornus; a small, rounded, black discocellular spot.

Male genitalia: Uncus shorter and wider, apically slightly bifurcate; gnathos horned, slightly sclerotized; valva elliptic, cucullus with 2 big processes; juxta with 2 long caudal processes, one of which 2/3 times as long as the other; aedeagus stout and long, without cornuti.

Female genitalia: Posterior apophysis short and thick, anterior apophysis long and thin; 8th sternite short and wide; ductus bursae short and wide, sclerotized; corpus bursae large; signum absent.

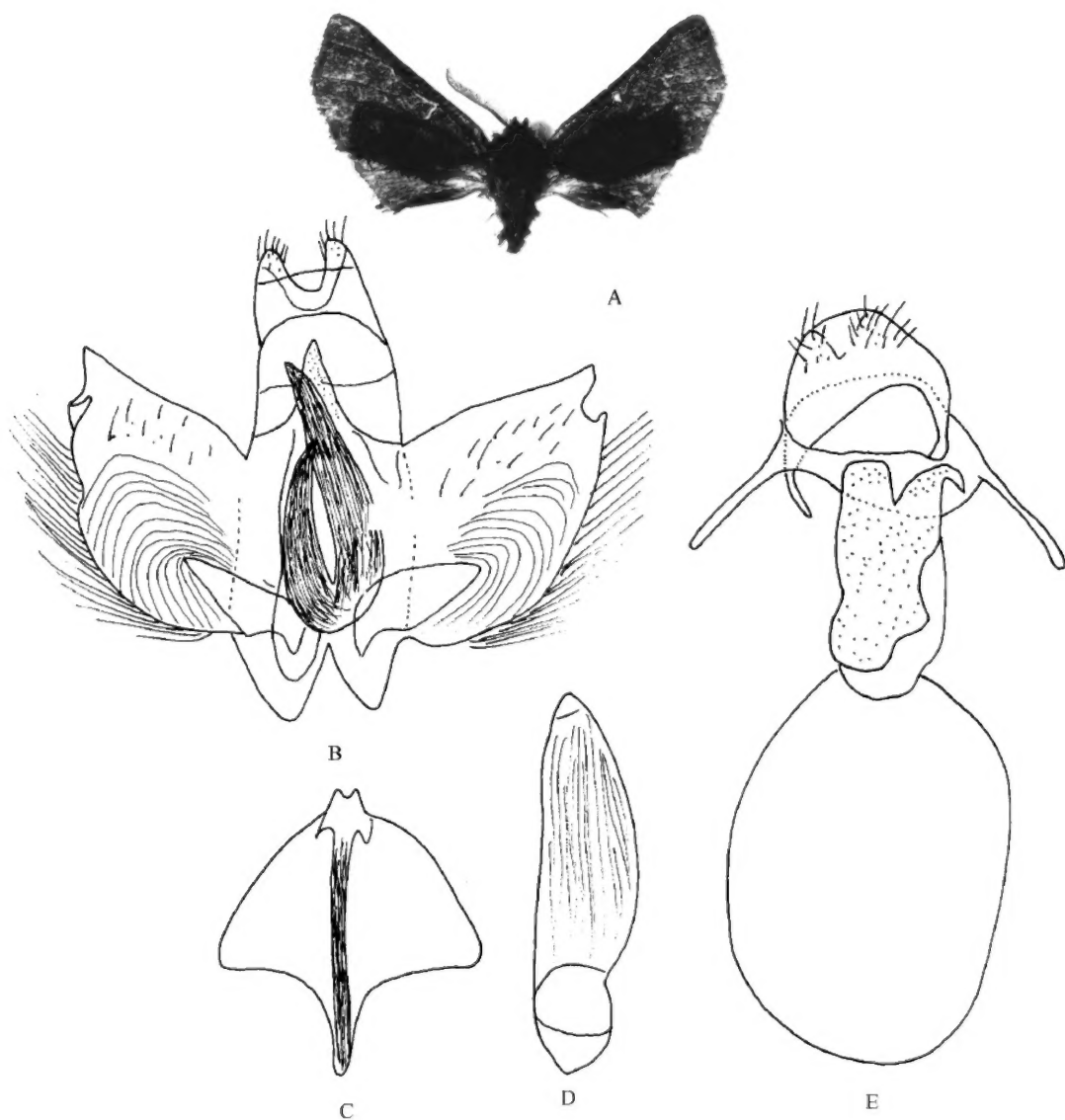


Fig. 1 *Micromelalopha variata* Wu et Fang, sp. nov.

A. adult (成虫); B. male genitalia (雄性外生殖器); C. 8th sternite (第8腹板); D. aedeagus (阴茎); E. female genitalia (雌性外生殖器)

Holotype ♂: Yunnan: Xiannggelila Co. : Chongjianghe (2 300 m), 1984. VIII. 4, collected by Liu Da-Jun.

Paratype ♀: Yunnan: Jingdong Co. (1 170 m), 1956. IV. 27.

Etymology: The name is derived from the Latin “*variatus*” (= varied), corresponding to the asymmetric juxta.

Distribution: Yunnan.

Diagnosis: This new species is related to *M. undulata* (Hampson), but differs from the latter by the asymmetric caudal processes of the juxta.

*Micromelalopha ralla* Wu et Fang, sp. nov. (Fig. 2)

Wing expanse 21 – 24 mm. Head and thorax dark yellowish brown. Abdomen yellowish brown. Forewing dark reddish brown, tinged with grayish purple; 2 gray fasciae edged with dark interiorly and exteriorly: subbasal fascia wavy, indistinct; inner fascia oblique, straight; outer fascia and subterminal fascia indistinct; a small, rounded, black discocellular spot. Hindwing pale reddish brown, outer half darker; with a small dark brown spot on tornus; a small, rounded, black discocellular spot.

Male genitalia: Uncus wider and longer, apically slightly bifurcate; valva elliptic, base with a broad process, cucullus with a small ventral process; juxta with a long caudal processes; aedeagus stout and long, with a big cornutus.



Fig. 2 *Micromelalopha ralla* Wu et Fang, sp. nov.

A. adult (成虫); B. male genitalia (雄性外生殖器)

Holotype ♂: Yunnan: Mt. Yulongshan (2 800 m), Lijiang Co., 1984. VII. 17, collected by Chen Yi-Xin.

Paratype: 1 ♂, same data as the holotype.

Etymology: The name is derived from the Latin “*rallus*” (= thin), corresponding to the thin caudal processes of the juxta.

Distribution: Yunnan.

Diagnosis: This new species is similar to *M. vicina* Kiriakoff in external characters, but differs from the latter by the indistinct outer and subterminal fasciae on the forewing. The male genitalia is similar to *M. haemorrhoidalis* Kiriakoff, but differs from the latter by the very long aedeagus and the slender caudal processes of the juxta.

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# 中国小舟蛾属分类研究

(鳞翅目：舟蛾科)

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**摘要：**系统整理了小舟蛾属 *Micromelalopha* Nagano, 1916 的全部中国种类共 10 种，包括 2 新种异小舟蛾 *M. variata* Wu et Fang 和细小舟蛾 *M. ralla* Wu et Fang；并将 *M. flavomaculata* Tshistjakov 作为邻小舟蛾 *M. vicina* Kiriakoff 的亚种，赭小舟蛾秦岭亚种 *M. haemorrhoidalis cinereibasis* Kiriakoff 作为指名亚种 *M. haemorrhoidalis haemorrhoidalis* Kiriakoff 的异名处理。文中提供了分种检索表、新种形态描述和外生殖器特征图。模式标本保存在中国科学院动物研究所动物标本馆。

**关键词：**鳞翅目；舟蛾科；小舟蛾属；新种；中国

**中图分类号：**Q969.42      **文献标识码：**A      **文章标号：**0454-6296 (2003) 02-0222-06